

INCOMING INTERTOLL TRUNKS
AND
INCOMING PORTION OF INTRAOFFICE ARRANGEMENTS PER ES-27601-01
TESTS USING TRUNK TEST CIRCUIT SD-25918-01
NO. 5 CROSSBAR OFFICES

1. GENERAL

PAGE

1.01 This section describes a method of testing incoming intertoll trunks SD-25843-02, SD-25844-01, SD-26152-01, and SD-27646-01; incoming features of 2-way intertoll trunks; and incoming portion of intraoffice arrangements per ES-27601-01. The tests are made with the use of the master test control circuit, SD-25800-01, and the trunk test circuit, SD-25918-01, in the No. 5 crossbar offices.

of answering supervision toward originating end. (5) Polarity and continuity of leads between trunk and incoming register.

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1.02 This section is reissued for the following reasons:

- (a) To revise the section title to delete reference to Wide Area Data Service and to indicate that ES-27601-01 describes the intraoffice arrangements to which reference is made.
- (b) To revise 1.01 to include the SD- numbers of the trunks being tested.
- (c) To incorporate material from the addendum.
- (d) To make minor changes as required.

B. Ringing Selection Switch: The following features are checked: (1) Application of ringing combinations. (2) Polarity of ringing current on tip and ring leads of terminating end of trunk. . .

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C. Pretrip and Trip: This test checks the proper functioning of the tripping relay.

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D. Line Busy — Terminating Call: This test checks that call progress line-busy tone is connected to the originating line when the terminating line is found busy.

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E. Overflow — Terminating Call: This test checks that call progress overflow tone is connected to the originating line when the marker is unable to establish a terminating connection.

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Since this is a general revision, arrows ordinarily used to indicate changes are omitted.

1.03 The tests covered are:

- A. Trunk Seizure and Release — Terminating Call:** The following features are checked: (1) Seizure of trunks. (2) Selection and seizure of incoming register. (3) Completion of connection to called line in local office. (4) Return

F. Trunk Seizure and Release — Through Call: The following features are checked: (1) Seizure of trunk. (2) Selection and seizure of incoming register. (3) Selection and seizure of outgoing trunk and sender. (4) Completion of connection to outgoing trunk through line link appearances of this trunk. (5) Return of answering supervision toward originating end. (6) Transmission of rering signal to called end. . .

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G. Overflow — Through Call: This test checks that call progress overflow tone is connected to the originating line when the marker is unable to establish a through connection.	11
H. Time-Out: This test checks that the connection to the called line is held for 13 to 32 seconds after the originating line disconnects if trunk is arranged for time-out.	12
I. Preliminary Ring: This test checks the ability of the trunk to transmit a preliminary ring to the called customer.	13
1.04 When performing Test F on trunks having two line-link frame appearances, one-half of the incoming registers associated with the trunk being tested are made busy.	
1.05 Test G requires action and verification at the distant office testboard.	
1.06 <i>Lettered Steps:</i> A letter a, b, c, etc, added to a step number in Parts 3 and 4 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.	
1.07 Local instructions should be followed for recording and reporting any register operations caused by performing these tests.	
1.08 Depending upon the issue of the drawings to which the master test frame (MTF) is wired, the selection of circuits such as markers and recorders and the selection of class of test, class of service, etc, may be controlled by the operation of a key, the setting of a rotary switch, or both. In order to simplify the instructions in	

ACTION for making such selections, the statement will be made without specifying either keys or switches with the specific action being determined by the apparatus furnished on a particular test frame. For example:

STEP	ACTION
1	Operate MT- or MTT1, MTU- to select marker under test. (Interpreted to mean: Operate MT- key or set MT switch; or operate MTT1 key and set MTU switch.)
2	Operate DT or TSTA (DT). (Interpreted to mean: Operate DT key or set TSTA switch to DT position.)

2. APPARATUS

Tests A Through F, H, and I

- 2.01** Patching cords, two P3E cords, 6 feet long, each equipped with two 310 plugs (3P7A cords).
- 2.02** 322A (make-busy) plugs as required.
- 2.03** Master test control circuit, SD-25800-01.
- 2.04** Trunk test circuit, SD-25918-01.
- 2.05** Master test frame telephone, key, and lamp circuit, SD-25744-01.
- 2.06** Miscellaneous master test frame circuit, SD-25748-01.

Test G

- 2.07** Blocking and insulating tools as required. Use tools and apply, as covered in Section 069-020-801.

Test H

- 2.08** KS-3008 stopwatch, or equivalent.

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

- | | | |
|---|---------------------------------------------------|-------------------------|
| 1 | At MTF —
Restore all keys and switches. | |
| 2 | Momentarily operate RL key. | All lamps extinguished. |
| 3 | At distant office —
Remove trunk from service. | |

Tests A Through F, H, and I

- | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 4a | If intraoffice arrangement is under test —
At MTF —
Insert make-busy plug into OGT-MB jack
of associated outgoing trunk under test. | |
| 5b | If 2-way intertoll trunk is under test —
At MTF —
Insert make-busy plug into OGT-MB jack
of trunk under test. | |
| 6c | If trunk has incoming CX or SX supervi-
sion —
At relay rack frame —
Determine that trunk under test is not busy
on a service call by checking that D relay is
nonoperated or that S1, TM, IN relays are
nonoperated in 2-way trunks.
When trunk is not busy —
Patch T1, T2 jacks of trunk to T1, T2 jacks
on frame. | |
| 7d | If trunk has incoming reverse battery super-
vision —
At relay rack frame —
Determine that trunk under test is not busy
on a service call by checking that D relay is
nonoperated.
When trunk is not busy —
Patch T jack of trunk to ITT jack on frame. | |
| 8 | At MTF —
Operate ITNP or TSTB (ITNP), TLK. | |

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4. METHOD

STEP	ACTION	VERIFICATION
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A. Trunk Seizure and Release — Terminating Call

Trunks Arranged for Incoming CX or SX Supervision

9	Operate RC1, TTL, IC (TOL).	TOL lamp lighted.
10	Operate A-, B-, C- for local completion office code.	
11	Momentarily operate ST key.	ITNP lamp lighted.
12	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. TS lamp lighted. R— lamp flashes. Call progress ringing tone heard.
13	Operate ANS key.	OGT-CS lamp lighted. R— lamp extinguished. Steady tone heard.
14	Restore ANS key.	OGT-CS lamp extinguished. Steady tone silenced.
15	Restore TLK, LS keys.	TS lamp extinguished.
16	Momentarily operate RL key.	All lamps extinguished except TOL.
17e	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
18a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
19b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
20	At distant office — Restore trunk to service.	

Trunks Arranged for Incoming Reverse Battery Supervision

21	Operate RC1, TTL, HS, IRV keys.	
22f	If trunk has 1000-ohm loop compensation — Operate COMP key.	
23	Operate A-, B-, C- for local completion office code.	
24	Momentarily operate ST key.	ITNP lamp lighted.

STEP	ACTION	VERIFICATION
25	Operate GS key for about 3 seconds.	SLV lamp not lighted.
26	Restore IRV key.	
27	Operate SLP key.	SLV lamp lighted. OGT-CS lamp may be momentarily lighted.
28	Operate LS key.	SLV lamp extinguished. TS lamp lighted. R— lamp flashes. Call progress ringing tone heard.
29	Operate ANS key.	OGT-CS lamp lighted. R— lamp extinguished. Steady tone heard.
30	Restore ANS key.	OGT-CS lamp extinguished. Steady tone silenced.
31	Restore TLK, LS, SLP keys.	TS lamp extinguished.
32	Momentarily operate RL key.	All lamps extinguished.
33e	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	
34	At distant office — Restore trunk to service.	

B. Ringing Selection Switch

9	Operate A-, B-, C- for local completion office code.	
10	Operate TTL key.	
11	Operate RC1 key.	
12c	If trunk has incoming CX or SX supervi- sion — Operate IC (TOL).	TOL lamp lighted.
13c	Momentarily operate ST key.	ITNP lamp lighted.
14c	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. TS lamp lighted. R— lamp flashes. Call progress ringing tone heard.
15e	If trunk has 1000-ohm loop compensa- tion — Operate COMP key.	

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STEP	ACTION	VERIFICATION
16d	If trunk has incoming reverse battery supervision — Operate LS, SLP keys.	
17d	Momentarily operate ST key.	ITNP, TS lamps lighted. OGT-CS, SLV lamps may be momentarily lighted. R— lamp flashes. Call progress ringing tone heard.
18	Restore LS, TLK keys.	TS, R— lamps extinguished. Call progress ringing tone silenced.
19	Momentarily operate RL key.	All lamps extinguished except TOL.
20	Repeat Steps 12c through 19, operating RC11 key.	T— lamp flashes.
21f	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
22a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
23b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
24	At distant office — Restore trunk to service.	

C. Pretrip and Trip

9	Operate A-, B-, C- for local completion office code.	
10	Operate RC1, TTL keys.	
11c	If trunk has incoming CX or SX supervision — Operate IC (TOL).	TOL lamp lighted.
12c	Momentarily operate ST key.	ITNP lamp lighted.
13c	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. TS lamp lighted. R— lamp flashes. Call progress ringing tone heard.
14e	If trunk has 1000-ohm loop compensation — Operate COMP key.	
15d	If trunk has incoming reverse battery supervision — Operate LS, SLP keys.	

STEP	ACTION	VERIFICATION
16d	Momentarily operate ST key.	ITNP lamp lighted. OGT-CS, SLV lamps may be momentarily lighted. TS lamp lighted. R— lamp flashes. Call progress ringing tone heard.
17	Hold operated PTP key for 1/2 second during silent interval of ringing. (See Note.) <i>Note:</i> After having been lighted, the R— lamp is extinguished during silent interval.	R— lamp continues to flash at same rate.
18f	If test circuit has 1500-ohm test resistance — Hold operated TRP key for 1/2 second during silent interval of ringing.	R— lamp extinguished. Call progress ringing tone silenced.
19g	If test circuit has other 1500-ohm test resistance — Hold operated TRP key for 1 second during silent interval of ringing.	R— lamp extinguished. Call progress ringing tone silenced.
20	Momentarily operate RL key.	All lamps extinguished except TOL.
21h	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
22a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
23b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
24	At distant office — Restore trunk to service.	

D. Line Busy — Terminating Call

9	Operate A-, B-, C- for local completion office code.	
10	Operate BB key.	
11c	If trunk has incoming CX or SX supervision — Operate IC (TOL).	TOL lamp lighted.
12c	Momentarily operate ST key.	ITNP lamp lighted.
13c	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. Call progress line-busy tone heard.
14e	If trunk has 1000-ohm loop compensation — Operate COMP key.	

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STEP	ACTION	VERIFICATION
15d	If trunk has incoming reverse battery supervision — Operate LS, SLP keys.	
16d	Momentarily operate ST key.	ITNP lamp lighted. OGT-CS, SLV lamps may be momentarily lighted. Call progress line-busy tone heard.
17	Momentarily operate RL key.	All lamps extinguished except TOL. Call progress line-busy tone silenced.
18f	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
19a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
20b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
21	At distant office — Restore trunk to service.	

E. Overflow — Terminating Call

9	Operate A- through G- for local completion office code, permanent overflow test number.	
10	Operate KY key.	
11c	If trunk has incoming CX or SX supervision — Operate IC (TOL).	TOL lamp lighted.
12c	Momentarily operate ST key.	ITNP lamp lighted.
13c	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. Call progress overflow tone heard.
14e	If trunk has 1000-ohm loop compensation — Operate COMP key.	
15d	If trunk has incoming reverse battery supervision — Operate LS, SLP keys.	
16d	Momentarily operate ST key.	ITNP lamp lighted. OGT-CS, SLV lamps may be momentarily lighted. Call progress overflow tone heard.
17	Momentarily operate RL key.	All lamps extinguished except TOL. Call progress overflow tone silenced.

STEP	ACTION	VERIFICATION
18f	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
19a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
20b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
21	At distant office — Restore trunk to service.	

F. Trunk Seizure and Release — Through Call

9e	If trunk has two line link frame appearances — Insert make-busy plugs into IRMB- jacks of incoming registers associated with trunks being tested, served by even-numbered incoming register marker connectors.	
10	Operate REC, TTL keys.	
11	Operate A-, B-, C- for office code required to select an outgoing intertoll or toll switching trunk having incoming CX or SX supervision.	
12f	If selected outgoing trunk has outgoing CX or SX supervision — Operate E-M key.	
13c	If trunk has incoming CX or SX supervision — Operate IC (TOL).	TOL lamp lighted.
14c	Momentarily operate ST key.	ITNP lamp lighted.
15c	Operate LS key.	OGT-CS lamp may be momentarily lighted. SLV lamp may be momentarily lighted. E lamp lighted per Table A. Trouble recorder card received as follows: TKT, OCN, and TRK or 1TR designations perforated. FTT-, FUT-, VGT-, HGT-, VFT- designations perforated, indicating one of line link frame appearances of trunk under test.

TABLE A

	LAMP LIGHTED
Outgoing trunk arranged for outgoing CX or SX supervision	E
Outgoing trunk not arranged for outgoing CX or SX supervision	—

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STEP	ACTION	VERIFICATION
16g	If trunk has 1000-ohm loop compensation — Operate COMP key.	
17h	If trunk has incoming reverse battery supervision and two line link frame appearances — Operate LS, SLP, IC (TAN).	TAN lamp lighted.
18h	Momentarily operate ST key.	ITNP lamp lighted. OGT-CS, SLV lamps may be momentarily lighted. E lamp lighted per Table A. Trouble recorder card received as follows: TKT, OCN, and TRK or 1TR designations perforated. FTT-, FUT-, VGT-, HGT-, VFT- designations perforated, indicating one of line link frame appearances of trunk under test.
19i	If trunk has one line link frame appearance — Operate LS, SLP, IC (TAN).	TAN lamp lighted.
20i	Momentarily operate ST key.	ITNP lamp lighted. OGT-CS, SLV lamps may be momentarily lighted. E lamp lighted per Table A. Trouble recorder card received as follows: TKT, OCN or ECN, TRK or 1TR designations perforated. FTT-, FUT-, VGT-, HGT-, VFT- designations perforated, indicating line link frame appearance of trunk under test.
21e	If trunk has two line link frame appearances — Remove plugs from IRMB- jacks of registers made busy.	
22	Operate ANS key.	OGT-CS lamp lighted. Steady tone heard.
23f	If selected outgoing trunk has outgoing CX or SX supervision — Dial digit 1.	E lamp momentarily lighted.
24	Restore ANS key.	OGT-CS lamp extinguished. Steady tone silenced.
25	Restore TLK, LS keys.	
26f	If selected outgoing trunk has outgoing CX or SX supervision — Restore TLK, LS, E-M keys.	E lamp extinguished.

STEP	ACTION	VERIFICATION
27	Momentarily operate RL key.	All lamps extinguished except TOL, TAN.
28e	If trunk has two line link frame appearances — Insert make-busy plugs into IRMB- jacks of incoming registers associated with trunk being test, served by odd-numbered incoming register marker connections.	
29	Operate TLK key.	
30f	If selected outgoing trunk has outgoing CX or SX supervision — Operate E-M key.	
31e	If trunk has two line link frame appearances — Repeat Steps 13c through 15c or 17h, 18h.	Trouble recorder card received as follows: TKT, ECN, and TRK or 1TR designations perforated. FTT-, FUT-, VGT-, HGT-, VFT- designations perforated, indicating other line link frame appearance of trunk under test.
32	Momentarily operate RL key.	All lamps extinguished except TOL, TAN.
33e	If trunk has two line link frame appearances — Remove plugs from IRMB- jacks of registers made busy.	
34j	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	TOL, TAN lamps extinguished.
35a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
36b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
37	At distant office — Restore trunk to service.	

G. Overflow — Through Call

4a	If 2-way intertoll trunk is under test — At MTF — Insert make-busy plug into OGT-MB jack of trunk under test.
5a	At relay rack frame — Block nonoperated relays as follows: Nonwire-spring-relay type trunk — TS1, TS2 relays. Wire-spring-relay type trunk — TS relay.

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STEP	ACTION	VERIFICATION
6a	At distant office — Originate through call.	Call progress overflow tone heard.
7a	Disconnect call.	Call progress overflow tone silenced.
8a	At relay rack frame — Remove blocking tools.	
9a	At MTF — Remove plug from OGT-MB jack.	
10b	If no other test is required for this trunk — At distant office — Restore trunk to service.	
H. Time-Out		
9	Operate A-, B-, C- for local completion office code.	
10	Operate LS, SLP, RC1, TTL keys.	
11e	If trunk has 1000-ohm loop compensation — Operate COMP key.	
12	Momentarily operate ST key.	ITNP, TS lamps lighted. OGT-CS lamp may be momentarily lighted. R— lamp flashes. Call progress ringing tone heard.
13	Operate ANS key.	OGT-CS lamp lighted. R— lamp extinguished. Steady tone heard.
14	Restore LS key.	
15	Restore TLK key, <i>start timing</i> .	OGT-CS lamp extinguished. Steady tone silenced. In 13 to 32 seconds — TS lamp extinguished.
16	Momentarily operate RL key.	All lamps extinguished.
17f	If no other test is required for this trunk — Restore all keys and switches; remove all patching cords.	
18a	If intraoffice arrangement is under test — Remove plug from OGT-MB jack.	
19b	If 2-way intertoll trunk is under test — Remove plug from OGT-MB jack.	
20	At distant office — Restore trunk to service.	

STEP	ACTION	VERIFICATION
I. Preliminary Ring		
9	At relay rack frame of trunk under test — Insulate 2T, 3T of PRB relay.	
10	At MTF — Operate A-, B-, C- for local completion office code.	
11	Operate TTL key.	
12	Operate RC1 key.	
13c	If trunk has incoming CX or SX supervision — Operate IC (TOL).	TOL lamp lighted.
14c	Momentarily operate ST key.	ITNP lamp lighted.
15c	Operate LS key.	OGT-CS lamp momentarily lighted. SLV lamp may be momentarily lighted. TS lamp lighted. R— lamp flashes once for a 1/2 second. Call progress ringing tone heard.
16e	If trunk has 1000-ohm loop compensation — Operate COMP key.	
17d	If trunk has incoming reverse battery supervision — Operate LS, SLP keys.	
18d	Momentarily operate ST key.	ITNP, TS lamps lighted. OGT-CS, SLV lamps may be momentarily lighted. R— lamp flashes once for a 1/2 second. Call progress ringing tone heard.
19	Restore LS, TLK keys.	TS lamp extinguished. Call progress ringing tone silenced.
20	Momentarily operate RL key.	All lamps extinguished except TOL.
21	At relay rack frame of trunk under test — Remove insulator from 2T, 3T of PRB relay.	
22f	If no other test is required for this trunk — At MTF — Restore all keys and switches; remove all patching cords.	TOL lamp extinguished.
23a	If intraoffice arrangement is under test — At MTF — Remove plug from OGT-MB jack.	

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STEP	ACTION	VERIFICATION
24b	If 2-way intertoll trunk is under test — At MTF — Remove plug from OGT-MB jack.	
25	At distant office — Restore trunk to service.	